

### Your Guarantee of Satisfaction

This product is guaranteed to the original purchaser against defects in material and workmanship for one year from the date of initial purchase. Activate this guarantee at the time of purchase by returning the Guarantee Card to the address on the back page. Keep a copy of your sales receipt for proof of guarantee status, should it be necessary.

The crossfader itself is a replaceable part and is only guaranteed against defective workmanship. The slider selected for the crossfader function has been chosen for its excellent mechanical properties. In a discotheque application the extensive use of this facility means that the number of operations in a twelve month period can exceed the manufacturer's electrical specification.

If a malfunction occurs, the dealer who supplied the unit will be happy to handle the repair. When returning a unit, use the original factory carton - do not chance inadequate packing materials. Simply tape a note to the unit describing the malfunction.

If your unit is out of guarantee, we recommend that you return it to an authorised Citronic dealer for repair or service. Experienced personnel, supported by specialist testing equipment, will be able to find and correct the fault in the most efficient and cost effective way.

### 9: CE Marking

#### **EMC Conformity**

The CDM10:4 and CDM10:4 DSP have been tested to demonstrate compliance with the EMC 89/336/EEC directive, under which the following harmonised standards apply:

- i) EN52020 Electromagnetic Immunity
- ii) EN61000-3-2 Mains Harmonic Disturbance Limits
- iii) EN61000-3-3 Voltage Fluctuations Limits
- iv) EN55013 Electromagnetic Compatibility

#### **Electrical Equipment Safety Regulations (1994)**

The CDM10:4 and CDM10:4 DSP have been designed and tested to demonstrate compliance to the LVD 73/23/EEC directive, using the following standard.

- i) EN60065 Safety Requirements for mains operated electronic equipment for household and similar general use.

N.B. Citronic reserve the right to alter these specifications at any time and for any reason without liability.

# CDM10:4

## 19" x 6u Professional DJ Mixer

Models covered by this Manual:- CDM10:4/2 & CDM10:4 DSP

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**CITRONIC**

Citronic Limited, innovative leaders in the manufacture of professional audio equipment, are proud to present the CDM10:4 and The CDM10:4 DSP Mixer.

Established in Melksham Wiltshire, in 1972, the company occupies prestigious purpose built factory headquarters and is one of the leading employers in the area.

The Company's award winning product range covers professional Audio Mixers, Amplifiers, Signal Processing and Loudspeakers. Each unit is manufactured to the highest possible standards, and all have an enviable reputation for reliability and value for money-the noted hallmark of Citronic products.

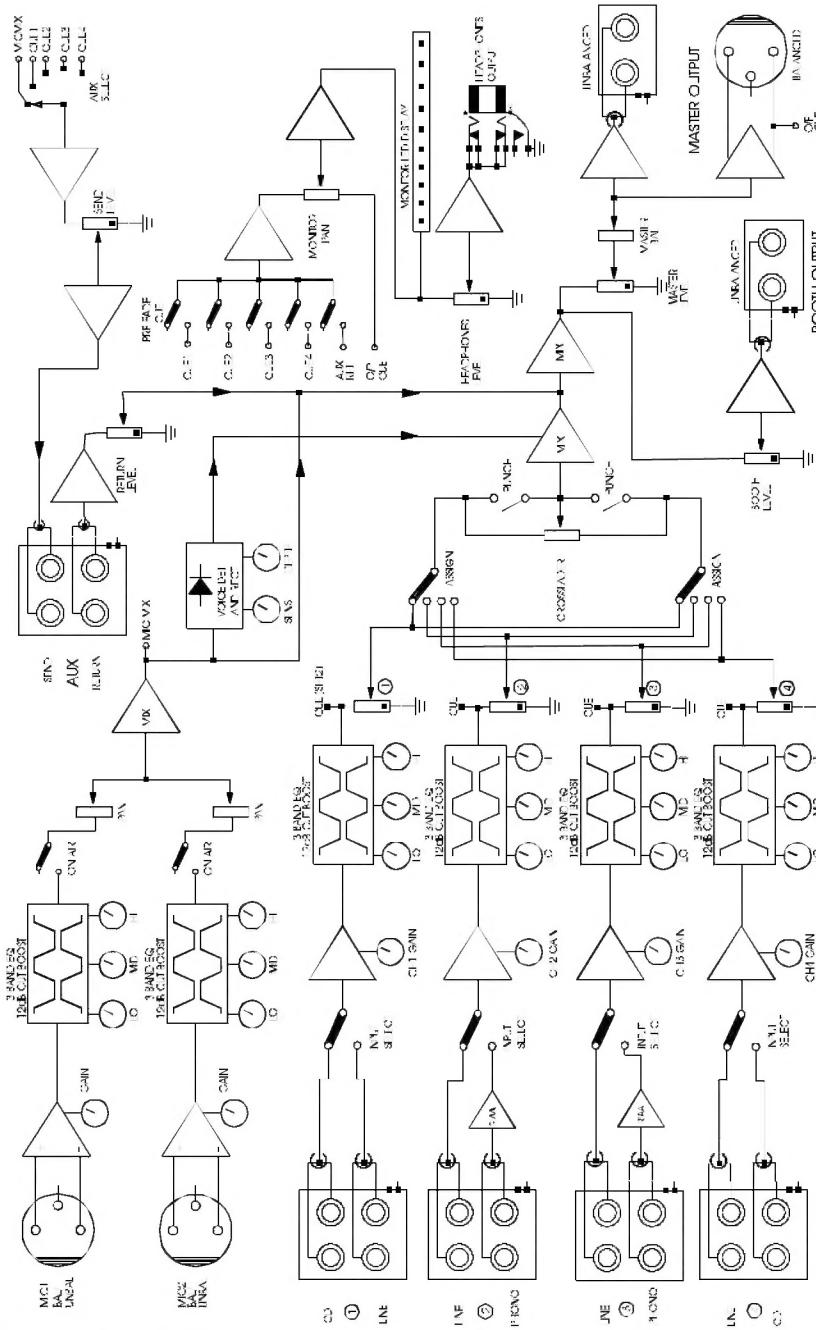
Substantial investment has been made in high technology CAD systems, manufacturing control and testing techniques. This sophisticated computerisation, coupled with an extensive research and development program, enables the company to offer an exceptional degree of manufacturing excellence and quality assurance.

Citronic has always listened carefully to the customer, and places tremendous emphasis on market research. This ensures that the exacting requirements of the installer and operator are complemented, without compromise, throughout the entire product range. This unique approach, coupled with a strong input from a highly qualified engineering team, ensures that Citronic maintains its position as a respected leader, in the industry's development.

Citronic has a distribution network throughout Europe, Asia and the Americas.

## **WARNING**

In order to obtain the best service from the unit we STRONGLY recommend that you read this manual before you apply any power.



Block Diagram CDM10:4 version only

## CDM10:4 DSP ONLY

### SPECIFICATION OF DIGITAL REVERB BOARD

#### RV98B/98BL - RV98M/98ML

ADC/DAC	PCM3006 (Burbrown)	MN64673 (Matsushita)
Sampling Frequency	31.25KHz	- 48KHz
Frequency Response	20KHz	- 15KHz
Dynamic Range	86db	- 82db
SR Ratio	86db	- 82db
THD + Noise	0.025%	- 0.04%
Input/Outo Level	2V p-p	- 1.75V p-p
Power Supply	+5V 70mA	- +5V 90mA
Dimension	35mm x 77mm	

### PROGRAM CHART

No	Reverb Type	Character	Time
0	Hall	Concert	2.4Sec w/pre-delay 25mSec
1	Hall	Arena	3.6Sec w/pre-delay 25mSec
2	Room	Club	1.8Sec w/pre-delay 10mSec
3	Room	Chamber	1.0Sec w/pre-delay 10mSec
4	Room	Garage	0.8Sec w/pre-delay 10mSec
5	Plate	Plate	2.0Sec w/pre-delay 5mSec
6	Plate	Vocal	1.5Sec w/pre-delay 5mSec
7	Spring		3.4Sec w/pre-delay 5mSec

### Stereo Delay

0	Stereo Delay	Short	5mSec
1	Stereo Delay	(Chorus/	10mSec
2	Stereo Delay	Flanger)	20mSec
3	Stereo Delay		30mSec
4	Stereo Delay	Long	200mSec
5	Stereo Delay		300mSec
6	Stereo Delay		400mSec
7	Stereo Delay		500mSec

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### 3: The CDM10:4 and CDM10:4 DSP Professional DJ Mixer's.

Both the above are fully featured professional quality DJ Mixer's offering complete control over the audio path to allow truly creative mixing.

There are 11 Inputs, on the both the CDM10:4 and CDM10:4 DSP, comprising of 3 Mics, 2 CD, 2 Phono and 4 Line all with complete control of gain and EQ.

The dedicated Mic inputs each have gain control, 3 Band Eq, Pan, On-Air switch and an over-ride system with variable sensitivity and depth. Except for the 3rd Mic input, as this uses Channel one's 3 band Eq but has no Mic Override facility.

The music Inputs also have Gain and 3 Band Eq with overall level controlled by professional quality faders. The DSP version adds The Cut feature to all 4 channel's and their 3 Band Eq's.

The CDM10:4 and CDM10:4 DSP both have a fully assignable dipless crossfader and Citronic's famous Punch Button facility for creative dubbing.

As well as a balanced main output there is a booth output and an auxiliary channel that can be assigned to the Microphone or music channels.

### Connecting your mixer

**Connecting your mixer**

The following pages give a full description of the connectors and their purpose. You should study this carefully before you power up the mixer to ensure you get the very best performance from your CDM10:4 or CDM10:4 DSP.

**Do's & Don'ts**

There are a few general Do's and Don'ts thoughts that you should become familiar with if you have not had a great deal of experience with professional audio systems.

**Cables & Connectors** - Always use good quality cables and connectors. It might seem expensive when you first look at it, but the first time you have a problem in front of an audience you'll bless the day you made that small investment. 25 years in the business has taught us that over 75% of all problems with DJ systems are simple connector ones. Don't get caught out.

**Switching on your system** - Get into the habit of turning on the mixer and all the inputs to it before you turn on the amplifiers. The CDM10:4 and CDM10:4 DSP have been designed not to harm your amplifiers or speakers if you turn the amplifiers on first, but this may not be true of the inputs plugged into the CDM10:4 and CDM10:4 DSP Mixer's. Play safe, always turn on your amplifiers last.

**Power Supply** - The power supply for your CDM10:4 and CDM10:4 DSP is built into the mixer's and will be fitted with a mains plug specifically for the mains supply in your country. If it does not match the power socket you wish to use check with your dealer before you plug it in. It is possible you could damage your mixer if it is not the correct version for your mains power supply. Worse still, it could be unsafe. Don't take chances with Mains Power - it can kill.

**Crossfader** - The crossfader is the most used feature on your mixer and great care has been taken in the choice of components for this function. Even so, it is the most likely thing to wear out first on your mixer, so we've made it quick and easy to replace. Don't get caught out, always carry a spare.

**Note:** When listening to a music channel and at the same time selecting digital effects on that channel a drop in music level maybe experienced if the DSP level control (38) is not set high enough. Simply adjust the level control to compensate for any drop in music volume.

**6: Technical Specification**

Parameter	Mic	Phono	Aux	Line/CD
Sensitivity	-54dBu (1.55mV)	46dBu (4mV)	-10dBu (195mV)	0dBu (775mV)
Input Impedance	2K	47K	10K	50K
Source Z Ohm	150 Ohm		2K Ohm	2K Ohm
Max Gain	50dB		+10dB	<-70 to +10dB
S/N Ratio*	68dB	73dB	>87dB	> 87dB
Freq Response**	25Hz to 30KHz	RIAA	< 10Hz to 24 KHz	
THD ***	0.042%		< 0.003%	< 0.005%

**Microphone Equalisation**

Lo	=	± 12dB @ 80Hz
Mid	=	± 13dB @ 600Hz
Hi	=	± 12dB @ 6KHz

**Music Channel Equalisation**

Lo	=	± 12dB @ 100Hz	-26dB Cut available on DSP version only.
Mid	=	± 13dB @ 800Hz	
Hi	=	± 12dB @ 9KHz	

**Noise Floor**

Main L,R Output:	< -100dBu	Width: 483mm (19")
Mic Pre-Amp T.E.I.N.	- 118dBu	Height: 266mm (6U)

**Headphones**

Load:	32 Ohms MIN	Depth: 80mm
Power:	112mV @ 32 Ohms	Weight: 5kg
Freq Response.**	11Hz to 25KHz	<b>Cut-out required:</b>
S/N	81dB	Width: 440mm Height: 250mm

**Output**

Master L,R Output:	Balanced XLR:	0 dBu (775mV rms)
	Unbalanced Phono:	0 dBu (775mV rms)
Booth, Aux Outputs:	Unbalanced Phono:	0 dBu (775mV rms)

**Note:** \* Measured at output 22Hz-22KHz Filtered  
\*\* Measured at 1 dB w.r.t. a 0dB ref at Mixer Output  
\*\*\* Measured at mixer output, 30KHz Filtered

**34) AC Supply Lead**

The CDM10:4 and CDM10:4 DSP mixer's are supplied with an attached lead terminated either in a 2 pin moulded plug or a UK 3 pin plug. If the moulded plug is incorrect for your wall socket, it is possible with caution to fit an alternative plug.

Cable colour code:

	U.K.	U.S.A
Live:	Brown	Black
Neutral:	Blue	White
Earth:	Yellow/Green	Green

**WARNING: THIS MIXER MUST BE EARTED**

**35) Fuse Holder**

This holder carries the 20mm fuse which is provided for safety.

Inspect and change the fuse as necessary with the correct type, if the unit fails to operate when correctly connected to the AC supply, by following the instructions on the rear of the mixer.

*Note: ALWAYS disconnect the AC power cord before changing the fuse.*

**36) Earth Stud**

Star point earth for auxiliary equipment e.g. Turntables

**37) Channel 1, 1/4" Jack, Unbalanced Mic Input**

Use the selector switch, on the rear panel, to switch from CD to Mic output.

**DSP Model Only****38) DSP Level Control**

Gives you control from 0 to 10 for the DSP processor level input.

**39) DSP Bank Selector**

This allows you to select between the 8 Reverb and 8 Delay effects.

**40) Modulation Control**

This changes the pitch of the selected effect from 0 to 10 in modulation.

**41) 12v Light Socket**

Suitable for attaching a Goose Neck Light with maximum 5w Lamp output.

**Using The Inbuilt DSP Effects.**

Select the desired channel via the AUX SELECT (25) switch to apply the effects.

If MIC is selected this will give digital effects on both balanced microphone channels

Positions numbered 1-4 will give digital effects on one music channel at a time.

**Microphones****1) Microphone Input**

Two combination XLR & 1/4" jack sockets are mounted on the front face of the mixer for connecting your microphones and offer both balanced or unbalanced connections.

The CDM10:4 DSP has an extra unbalanced 1/4" jack socket mounted on the rear panel:

Balanced Input Wiring:	Tip:	Pin2:	Positive	(HOT)
	Ring:	Pin3:	Negative	(COLD)
	Sleeve:	Pin1:	Ground	(SHIELD)

Unbalanced Input Wiring:	Tip:	Pin2:	Positive	(HOT)
	Ring:	Pin3:	Ground	(SHIELD)
	Sleeve:	Pin1:	Ground	(SHIELD)

Input Impedance 2K Ohm

Input Sensitivity -54dBu (1.55mV)

**2) Gain Controls**

Each microphone has it's own gain control allowing maximum microphone control and will accommodate most microphones, both low and high impedance's to 600 Ohms.

Range: <-70dB to 54dB

**3) Microphone Equaliser**

Each microphone input has a 3 Band Eq stage prior to Pan and Level controls.

**EQ Control 'Lo'**

This control allows 12dB of cut or boost to the low frequencies. (See page 13)

**EQ Control 'Mid'**

This control allows 12dB of cut or boost to the mid frequencies. (See page 13)

**EQ Control 'Hi'**

This control allows 12 dB of cut or boost to the high frequencies. (See page 13)

**4) Pan Control**

This control is used to set the stereo balance of the input signal and can "pan" it fully to left or right.

**5) On Air Switch**

Activates or de-activates the microphone without need to adjust the Gain control.

**Override Section**

Both The CDM10:4 and CDM10:4 DSP offer the facility to attenuate the main music program automatically when the microphone inputs are active. Except the 3rd Mic input, which uses Channel 1's Eq.

**6) Auto Override Active Switch**

When pressed the 'live' music program will be attenuated by a pre-set level determined by the 'depth' control (7), thus allowing either microphone signal to take priority on the main output channels.

**7) Depth Control**

This control pre-sets the level of which the main music program will be attenuated.

Attenuation range: 0dB (OFF) to 20 dB.

To disable the override facility, simply turn the control fully anticlockwise or release active switch.

**8) Sensitivity Control**

This control pre-determines the threshold of microphone signal at which the main music program will be 'ducked' in 'auto override' mode.

The higher the setting of this control the more sensitive the 'ducking' threshold becomes.

**Music Channels 1-4**

Four stereo Line, 2 stereo CD and 2 RIAA Phono inputs are arranged into 4 main music channels. Adding 1/4" jack, unbalanced Mic input on Channel 1 on the CDM10:4 DSP version.

**9) Input Sockets**

Phono Input: (CH2, 3)	RIAA Equalised Stereo Phono Sockets.
Input Impedance:	47K Ohm
Source Impedance:	Typical Magnetic Cartridge
Sensitivity:	3.8mV (-46dBu)

CD/Line Input: (CH1,2,3 & 4)	Standard Stereo Phono Sockets.
Input Impedance:	Typically 10K Ohm
Source Impedance:	2K Ohm (MAX)
Sensitivity:	775mV RMS (0dBu)

**10) Input Gain Controls**

Each main input channel has a gain control offering <-70 to +10dB gain range allowing compensation for differing input levels.

**11) Input Selection Buttons**

Selects either CD or Line on channels 1 and 4 or Phono or Line on channels 2 and 3.

**26) Aux Return Input**

Standard Stereo Phono Sockets.

Input Impedance: Typically 10K Ohm

Source Impedance: 2K Ohms (MAX)

Sensitivity: -10dBu (195mV rms)

**27) Aux Return Level**

This rotary control has a gain range of <- 70 to +10dB and controls the input signal present on Aux return sockets being mixed onto the main output channels.

**Cue/Monitor Section****28) CUE Switch**

This switch and indicator allows pre-fade listen on input signals of any of the 4 music and Aux return inputs through the headphone and LED meters, (useful while setting gains or trouble-shooting).

**29) Monitor Pan Control**

Varies the mix between the cued input and main L,R output, ideal for accurate beat mixing. Full left will give cued input, full right will give main output program.

**30) LED Monitor Display**

Twin 10 segment LED ladders shows the signal level of whatever is present on CUE/MONITOR bus, either PFL or output signals dependent on setting of monitor PAN control (29).

The LED ladder has a range of -23 to +10dB. The optimum running level of 0dB is reflected by the yellow LED in each display.

**31) Headphone Level Control**

Sets desired level to headphones. Headphone program depends on the position of the monitor pan control and cue switches.

**32) Headphone Socket (Standard Stereo 1/4" Jack)**

L/H Channel:	Tip
R/H Channel:	Ring
Ground:	Sleeve
Minimum Load Impedance:	32 Ohms

**33) Power Switch**

Controls the AC power to the mixer.

*Note: Be sure to switch on the power to your mixer before switching on the amplification system.*

**19) Balanced Outputs**

Master stereo program output provided by 3 pin Male XLR sockets:

Output wiring (Balanced)      Pin 1 - Ground  
                                     Pin 2 - Positive  
                                     Pin 3 - Negative

Nominal Output Level: Balanced:      0dBu (775mV rms)  
     Impedance: Output < 50 Ohm      Minimum Load 600 Ohm

**20) Unbalanced Output**

Master stereo program output provided by a standard unbalanced phono sockets.

Level      =      0dBu (775mV rms)  
     Output Impedance      =      < 50 Ohm  
     Load Impedance (MIN) =      5K Ohm

**21) Booth Output Fader Control**

This slider controls the overall output level of the unbalanced Booth Output. The program content of the Booth Output is the same as the MASTER OUTPUT.

**22) Booth Unbalanced Output**

Level      =      0dBu (775mV rms)  
     Output Impedance      =      < 50 Ohm  
     Load Impedance (MIN) =      5K Ohm

**Auxiliary Channels**

The Aux Send and return channel add the versatility of interfacing with effects units such as an Echo/Reverb processor for the microphone or a sampler for the music inputs.

**23) Aux Send Output**

The stereo Aux send program is provided via unbalanced phono sockets.

Level      =      0dBu (775mV rms)  
     Output Impedance      =      < 50 Ohm  
     Load Impedance (MIN) =      5K Ohm

**24) Aux Send Level**

This rotary control sets the signal output level of the Aux send output.

**25) Aux Select Switch**

This switch sets the input onto the Aux send output. This can be either the 'live' microphone or the pre-fade signal of any of the four main music channels.

**12) Music Channel Equaliser**

Each music channel has a 3 band Eq stage providing comprehensive control over individual input Eq content.

EQ Control 'Lo'

This control allows 12dB of cut or boost to the low frequencies. -26 total cut on CDM10:4 DSP (see page 13)

EQ Control 'Mid'

This control allows 12dB of cut or boost to the mid frequencies. -26 total cut on CDM10:4 DSP(see page 13)

EQ Control 'Hi'

This control allows 12dB of cut or boost to the high frequencies.-26 total cut on CDM10:4 DSP (see page 13)

**13) 45mm Fader**

The slider sets the signal level of the channel being mixed onto the main Left, Right Output channels or sent to the fully assignable Crossfader.

**14) Removable Crossfader**

This dipless 45mm crossfader is fully assignable to any of the four main music channels set by the ASSIGN switches (16).

The crossfader is easily and quickly replaced by removing the 2 outer pozis countersunk screws on the crossfader panel and unplugging attached ribbon connector.

**15) Punch Buttons**

Create such effects as transforming, and dub beat by transposing the program from one side of the crossfader directly onto the other side.

**16) Assign Switches**

Any of the four music channels can be assigned to either side of the crossfader by the setting of these switches.

NOTE: If the same channel is assigned to both sides of the crossfader at either extreme that channel will be muted but the channel will be live when the crossfaders at it's centre position. This setting can give the effect of 'faster dub fading' when crossfader is used from it's centre to either extreme.

**17) Balance Control**

This control is used to set the Stereo Balance of the master Left, Right Outputs. The master Output program can be fully panned to the Left or Right.

**18) Master Output Fader Control**

This slider controls the overall output level leaving the mixer at its Master Balanced XLR and Unbalanced Phono socket outputs.

